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Does Voluntary Corporate Social Performance Attract Institutional Investment? Evidence from China

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ABSTRACT

Manuscript Type: Empirical

Research Question/Issue: This study analyses whether institutional investment in China is affected by the voluntary corporate social performance (CSP) of firms, after controlling for ownership structure, corporate governance, compensation and other firm characteristics.

Research Findings/Insights: Firms with superior voluntary CSP attract more institutional investment, which remains robust after controlling for the reverse causality problem. Mutual funds are the main driver of the institutional investment pattern in China and invest more in firms that achieve better voluntary CSP with respect to employment equality and customer care. Insurance companies and social security funds invest more in firms that take care of their customers. Qualified Foreign Institutional Investors (QFIIs) are the only type of institutional investors tilting their investment in favour of firms doing well at saving energy.

Theoretical/Academic Implications: Our empirical evidence suggests different types of institutional investors showing preferences towards different aspects of investee firms' voluntary CSP. We innovatively separate firms' voluntary CSP into expected components that can be explained by firm characteristics and unexpected components (surprises) that cannot be explained by firm characteristics. Although institutional investors, in general, and mutual funds and QFIIs, in particular, own more shares in firms with more voluntary CSP surprises, only mutual funds trade on them in the subsequent year.

Practitioner/Policy Implications: Foreign institutional investors invest more in firms with better voluntary CSP, especially with respect to energy-saving and environmental issues, but they do not show a significant preference towards firms with better corporate governance in China. Our paper offers implications for policy makers in transitory and emerging economies with regards encouraging foreign institutional investors' equity investment.

Keywords: institutional investment, corporate social performance, China

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INTRODUCTION

Transitory and emerging economics (TEEs) have experienced a surge of awareness for and attention paid to corporate social responsibility (CSR) issues in the past decade. For example, China supplied more delegates than any other country to the 2007 International Leaders' Summit of the UN Global Compact (Waddock, 2008). As of 2009, Chinese firms were issuing over 15% of the world's CSR reports, but there is significant variation across Chinese firms in the amount of information disclosed on specific CSR activities (China WTO Tribune, 2009). Simultaneously, institutional investment, especially from foreign investors, has increased in TEEs. Prior studies (Coffey and Fryxell, 1991; Graves and Waddock, 1994; Cox, Brammer and Williamton, 2004) report the influence of voluntary corporate social performance (CSP) on institutional investment in developed economies. Despite the increasing importance and awareness of CSR in TEEs, the extant literature offers limited evidence from TEEs on the association between firms' CSP and institutional investors. Li and Lu (2016) empirically examine whether Chinese firms' environmental capital expenditure, an important dimension of CSR, affects the investment decisions of institutional investors, by classifying them into long-term and short-term investors. Differently from Li and Lu (2016), we consider firms' overall voluntary CSP and its multiple dimensions. In addition to the different methodologies adopted, we categorize institutional investors by their business nature into mutual funds, insurance companies, social security funds, and Qualified Foreign Institutional Investors (QFIIs).

We aim to answer the following questions, yet to be clarified in the literature. Do firms with superior voluntary CSP attract more investment from institutional investors in TEEs? Do foreign institutional investors, mostly from developed countries, demonstrate a preference for firms' voluntary CSP and corporate governance in TEEs, similarly to their investment pattern in developed economies? We address these questions by analysing the link

between the voluntary CSP of 1,461 Chinese listed firms and the shareholdings of different types of institutional investors, collectively and separately.

China provides a unique context for investigating the aforementioned research questions because endogeneity is of less concern, a unique rating for firms' voluntary CSP is available, and institutional investment has experienced explosive development. First, endogeneity is of relatively lower concern in our study. Institutional investors in China, as minority shareholders, are passive investors (Yuan et al., 2009) and provide little monitoring of company management (Chen et al., 2006). As such, China provides a better research context for analysing whether firms' voluntary CSP affects institutional investment than developed economies where institutional investors are more active in monitoring their investee firms. Second, firms' CSR activities had been voluntary in China until December 31, 2008. A firm's voluntary CSP may be more informative than mandatory CSP in explaining institutional investors' decision making. The Society of National Accounting Institute (SNAI) provides a unique CSR rating based solely on the voluntary CSR activities of all Chinese listed firms in 2007.[i] Its full coverage makes analyses of a large sample possible, and in turn provides more conclusive empirical evidence. Third, institutional investment has more than quintupled, from 5.73% in 2003 to 37.17% in 2010 (Xi, 2006), fuelled by equity investments from domestic institutional investors and QFIIs.[ii] Despite the dramatic increase in institutional investment, its landscape in the Chinese stock market remains ambiguous in the literature. Our study hence meets the timely call for studies of institutional investment in China and offers insights that could help foreign institutional investors with their investment decisions in TEEs like China.

We find that Chinese firms with superior voluntary CSP attract more institutional investment. This positive association remains robust after controlling for the reverse causality problem, ownership structure, corporate governance, compensation and other firm

characteristics. Mutual funds are the main driver of this investment pattern of institutional investors in China. Different types of institutional investors show preferences towards different dimensions of voluntary CSP.

Our study offers three contributions to the literature. The first contribution is to provide robust empirical evidence that a firm's voluntary CSP does attract more institutional investment in a TEE. Apart from choosing the Chinese research context, we adopt the lead-lag model to further alleviate the endogeneity problem and find that institutional investments in current and subsequent years are positively associated with firms' voluntary CSP. Such positive associations remain robust after controlling for the reverse causality problem using the two-stage least squares (2SLS) method.

Furthermore, we identify the types of institutional investors in China attracted by the voluntary CSP of Chinese listed firms. Both mutual funds and QFIIs invest more in firms with better voluntary CSP. We do not observe such an investment preference amongst long-term institutional investors such as insurance companies and social security funds, which is different from the UK evidence reported in Cox et al. (2004). However, mutual funds, QFIIs and long-term institutional investors are all likely to increase their shareholdings in firms with superior voluntary CSP in the subsequent year. Our further tests suggest that mutual funds invest more in firms achieving better voluntary CSP with respect to equality and customers, but less in those doing well at saving energy. QFIIs are the only type of institutional investors investing more in firms achieving better CSP in terms of saving energy. Insurance companies and social security funds prefer firms that look after their customers.

Last but not least, we provide empirical evidence on the impact of 'surprises' in firms' voluntary CSP, on institutional investment, by innovatively splitting a firm's voluntary CSP into two components – expected and unexpected. The unexpected voluntary CSP contains information surprises to institutional investors, whereas expected CSP can be explained by

other firm characteristics. Institutional investors in general, and mutual funds and QFIIs in particular, hold a high percentage of shareholdings in firms with surprisingly superior voluntary CSP that cannot be explained by corporate governance, ownership structure and other firm characteristics. However, only mutual funds are likely to increase their investment in firms with voluntary CSP surprises.

The rest of the paper proceeds as follows: Section 2 introduces the institutional background on CSR reporting and institutional investment in China; Section 3 reviews relevant literature and develops hypotheses; Section 4 illustrates the research design; Section 5 explains the sample selection and data collection; Sections 6 and 7 report the main empirical analyses and further tests, respectively; Section 8 discusses our findings and concludes the paper.

INSTITUTIONAL BACKGROUND

The CSR concept was introduced to the Chinese equity market in 2006. The China Business Council for Sustainable Development issued the *China CSR Recommended Standard and Best Practice* (the *Standard*, hereafter) in September 2006. The *Standard* offers normative suggestions and references for Chinese listed firms to follow and use to build up their capability at taking social responsibility. In September 2006, the Shenzhen Stock Exchange (SZSE) issued the *CSR Guide* (the *Guide*, hereafter) to encourage firms listed on the SZSE to issue CSR reports along with their annual reports. The *Guide* particularly encouraged CSR reporting from firms in specific industries, such as the biotech industry, high-polluting industries, mining, construction etc. The *Guide* recommended that the CSR reports of listed companies included at least four dimensions: employee protection, environmental pollution, product quality and community. The CSR reports were also supposed to disclose the gap between the companies' CSR practices and the requirements of

the *Guide* that particularly emphasize the importance of shareholders, employees, customers, and environmental protection.

Following on from these governmental signals in 2006, some large listed state-owned enterprises (SOEs) (e.g. State Grid, COSCO, China Mobile, and Baosteel Group) began publishing annual CSR reports in response to the normative suggestions in the *Standard* and the *Guide*. The majority of Chinese listed firms did not issue CSR reports until 2008, however (Marquis and Qian, 2014). The Shanghai Stock Exchange (SHSE) issued CSR guidelines in May 2008 to encourage CSR reporting by firms listed on the exchange. The first Chinese reference book providing practical guidance on preparing a CSR report was published in 2008 under the auspices of the Chinese Ministry of Commerce (CMC) (Yin et al., 2008). Later, the Chinese government developed its own reporting standards for Chinese companies - *Chinese Academy of Social Sciences Standards* 1.0 and 2.0 in 2009 and 2011, respectively.

After the issuance of the SHSE and CMC guidelines, CSR reporting became mandatory for most of the large listed firms in China. The SHSE imposed the CSR requirement on three types of its listed firms – about 300 constituent firms of the "Corporate Governance Index", financial firms, and firms with overseas listed shares. Meanwhile, the SZSE imposed the CSR requirement on firms included in the SZSE 100 index. As such, about 400-500 of the largest listed firms on the Chinese stock market have to comply with the CSR requirement.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Extant literature suggests that institutional investors prefer investing in firms with superior CSP, in developed economies. Early work by Coffey and Fryxell (1991) and Graves and Waddock (1994) shows that the number of institutional investors is positively related to a firm's social performance, within a model that draws on the efficient markets theory (Fama,

1970). However, the positive impact of firms' CSP on institutional investment in developed economies evidenced in the prior literature may be shadowed by an endogeneity concern. Institutional investors control the majority of the share value in developed countries and their attitude toward CSR could be both effect and cause – a measure of how seriously CSR is taken and a powerful signal to other investors about their views (Aguilera, Williams, Conley and Rupp, 2006). Institutional investors have incentives to actively monitor firm management (Pound, 1988; Shleifer and Vishney, 1986), play a role in encouraging and promoting CSR disclosures (Solomon, Solomon and Norton, 2002), and aim to enhance CSR via active ownership (Gifford, 2010).[iii]

As mentioned above, the endogeneity is less of a concern in China. Hence, we examine whether firms' CSP attracts institutional investment in this specific research context. We argue that institutional investors' preference for firms with superior voluntary CSP can be explained by two benefits brought by firms' voluntary CSR disclosure – reduced information asymmetry and enhanced social capital.

Firms' CSP generally provides benefits to investors by reducing the information asymmetry in equity markets (Cho, Lee and Pfeiffer Jr, 2013), reflecting managers' ethical concerns and driving transparent and reliable financial reporting (Kim, Park and Wier, 2012). Firms' CSP motivates voluntary CSR disclosures from both well-performing (Clarkson et al., 2008) and poorly performing (Patten, 2002) firms. Firms with superior CSP are less likely to engage in accruals management or real earnings management (Kim et al., 2012). Enhanced corporate transparency regarding firms' CSP leads to a positive association between firms' voluntary CSR disclosure and their access to capital (Cheng, Ioannou and Serafeim, 2013). Voluntary and transparent reporting by firms reduces information asymmetry between the firm and its investors (Diamond and Verrecchia, 1991; Lambert, Leuz and Verrecchia, 2007). Thus, we expect superior voluntary CSP by firms to reduce the information asymmetry and

be relevant to equity valuation. Given the relevance of CSP to equity valuation, institutional investors are likely to benefit from the reduced information asymmetry brought about by voluntary CSR reporting, despite their superior access to timely and high-quality financial information on firms. Using 2008's melamine contamination incident in China as a natural experiment,[iv] Wang, Qiu and Kong (2011) find that mutual funds' behaviours were significantly influenced by firms' voluntary CSP exceeding a certain threshold after the event.[v] Based on the argument that firms' voluntary CSP reduces information asymmetry, we expect that institutional investors hold more shares in firms with superior voluntary CSP.

Furthermore, the strength of a firm's CSP may to some extent represent its social capital. The notion of social capital suggests that CSR is the outcome of the relational accumulating process through which firms, especially those of a small size, build their social capital (Ortiz Avram and Ku¨hne, 2008). A growing number of sociologists, political scientists, economists, and organisational theorists have investigated the concept of social capital as reviewed in Adler and Kwon (2002). Social capital as a multidimensional concept (Paldam, 2000) has been investigated prevalently, in terms of relation networks (Burt, 1992; Coleman, 1988, 1990), trust and reciprocity norms (Putnam, 1993), and relational competences (Araujo and Easton, 1999). Social capital relates to various important aspects of business ethics, such as transparency, goodwill, and good citizenship (Spence, Schmidpeter and Habisch, 2003). We adopt the concept of social capital as trust, from Putnam (1993). Trust is a key parameter in CSR, as corporations see CSR as a means of demonstrating their legitimacy as trusted members of society, particularly following recent scandals in the US and Europe (Muthuri, Matten and Moon, 2009). Similarly, shared norms between the company and its stakeholders have been identified as vital for CSR. Carroll's definitions of CSR (1991) conceptualise '*ethical responsibilities*' as a key element of CSR, implying that a socially responsible company is expected to comply not only with the law but also with the

broader values and norms of society. As such, institutional investors may perceive a firm's voluntary CSP as a signal of its legitimacy and trust, as a social member that complies with the norms of society. Many large institutional investors have become involved in the effort to make their corporations more accountable not only for financial performance but also for social impacts.

Based on the above arguments that a firm's voluntary CSP reduces information asymmetry and enhances social capital, we predict that firms with superior CSP attract more institutional investment, which constitutes our first set of hypotheses as set out below:

H1a*: Institutional investors invest more in firms with high voluntary CSP ratings than in those with low voluntary CSP ratings.*

H1b: *Institutional investors are likely to increase their investment in firms with high voluntary CSP ratings.*

Different types of institutional investors have heterogeneous preferences for firm characteristics (Khurshed, Lin and Wang, 2011) and firms' CSP (Cox et al., 2004). Only long-term institutional investor groups (pension funds, insurance companies and life assurors) prefer firms with a better CSP rating in the UK, while a negative association is observed between firms' CSP and short-term institutional investors (investment trusts) (Cox et al., 2004).[vi] The categorisation of institutional investors varies by country. Institutional investors in China typically consist of mutual funds, insurance companies, social security funds, QFIIs, securities companies,[vii] trusts, banks, financial corporations, pension funds, and non-financial corporations. Non-financial corporations are likely to be business associates or parent companies. Hence, we exclude this type of institutional investor from our research as their investment objectives differ greatly from those of other financial institutions. The equity stakes of securities companies, trusts, banks, financial corporations and pension funds are negligibly low in the Chinese stock market. Given that preferences over a firm's CSP may

vary across different types of institutional investors, we discuss the expected relationship between firms' voluntary CSP and the main types of institutional investors in China, namely mutual funds, insurance companies, social security funds and QFIIs.

Mutual funds, as the largest group of institutional investors in China, have emerged and developed rapidly since 2000 (Yuan et al., 2009) as a result of regulatory efforts. In 2000, the *China Securities Regulatory Commission* (CSRC) made a strategic decision to cultivate the 'pillar role' of mutual funds, among other financial institutions, in its domestic stock market. According to CSRC statistics, by the end of June 2007 mutual funds accounted for 52.7% of the equity investment by institutional investors in the Chinese stock market. The positive association observed between mutual funds and firm performance suggests that the efforts of the CSRC to develop mutual funds as one of the major types of institutional investors have been successful (Yuan et al., 2009). Mutual funds in the US foster the corporate governance of their investee firms via both voice and exit governance approaches (Duan and Jiao, 2016).[viii] Although mutual funds may not actively monitor firm management in China as their counterparts do in developed economies, they may choose to tilt their investments in favour of firms with good voluntary CSP, which would also indicate prudence in their investment decisions made on behalf of their clients. Based on these conjectures, we expect firms' voluntary CSP to have a positive impact on the investment levels of mutual funds in China:

H2a: *Mutual funds invest more in firms with high voluntary CSP ratings than those with low voluntary CSP ratings.*

H2b: *Mutual funds are likely to increase their investment in firms with high voluntary CSP ratings.*

Long-term institutional investors in China mainly include insurance companies and social security funds. Equity investments by insurance companies and social security funds

are restricted by the Chinese government. Insurance companies are only allowed to invest a maximum of 25% of their insurance funds in the Chinese stock market, according to the regulations of the CSRC and the *China Insurance Regulatory Commission* (CIRC).[ix] Compared with insurance companies, social security funds are relatively new participants in the Chinese stock market and have only existed in China since 2000.[x] The national social security fund serves as a strategic reserve fund, accumulated by the central government to support future social security expenditures and other social security needs. Initially, social security funds were not allowed to invest in the equity market in China. Even now, their investment in the equity market is limited. For instance, temporary provisions on *National Social Security Funds Investment Management* explicitly state that social security funds' investment in the equity market cannot exceed 40% of their total assets. According to CSRC statistics, insurance companies and social security funds respectively held 5.2% and 1.7% of the equity investments in the Chinese stock market in 2007.

Insurance companies and social security funds have long-term pay-out obligations to their clients and hence have incentives to tilt their investment towards socially responsible firms. Because of their relatively predictable cash outflows, insurance companies and social security funds typically hold their shares in investee firms for a long period. Their long-term investment horizon motivates insurance companies and social security funds to act as patient capital and remain steady investors in investee firms. Long-term institutional investors value the long-term prospects of a firm, which may be strengthened by the reputation reflected in its CSP rating. Since financial benefits of CSP are expected to accrue in the long term, we expect that long-term institutional investors such as insurance companies and social security funds are more likely to invest in firms with better CSP. Based on these arguments, our next set of hypotheses is as stated below:

H3a**:** *Long-term institutional investors (insurance companies and social security funds) invest more in firms with high voluntary CSP ratings than in those with low voluntary CSP ratings.*

H3b**:** *Long-term institutional investors (insurance companies and social security funds) are likely to increase their investment in firms with high voluntary CSP ratings.*

Foreign institutional investors were restricted from investing directly in the Chinese stock market in the past. Since 2002, the Chinese government has permitted QFIIs to invest in its securities market (Zhang, 2001; Greenaway, Guariglia, and Yu, 2011). The QFII scheme represents a significant departure from China's traditional approach of strict capital controls. Foreign institutional investors only qualify if they had no less than USD 10 billion securities assets in the previous financial year and meet other stringent criteria that vary for different business types. For example, commercial banks have to be ranked among the world's top 100 banks, fund management companies should have five years of operational experience, whereas insurance and securities firms should have 30 years of operational experience with paid-up capital of at least USD 1 billion.

The QFII programme is closely scrutinised by the Chinese government, and the securities investment activities of QFIIs are regulated by the CSRC and the *State Administration of Foreign Exchange* (SAFE). The CSRC has the right to decide which foreign investors qualify for the programme. The QFII programme does not allow for unrestricted repatriation of funds and requires a minimum lock-in period of one year, which extends to three years for closed-end funds. During the lock-in period, the funds remitted into China by the QFII must be held by custodians in a special-purpose RMB account. The total amount that QFIIs can invest in a single listed company, individually or collectively, is restricted by investment quotas, set by SAFE. The list of approved QFIIs and their combined and individual investment quotas are frequently updated by the CSRC and SAFE. Currently,

the amount of available shares falls short of demand, and a QFII is never assured of getting an allocation in any event.

The QFII scheme is expected to lead to market-driven improvements in corporate governance in China, as QFIIs are all large international institutions from major developed countries, for example, the US, the UK, Germany, France, Japan, Canada, the Netherlands, and Switzerland (Liu et al., 2014). QFIIs may prefer firms with more voluntary CSR disclosure or better corporate governance, in China, as they do in developed markets. Using equity holdings from 27 countries, Ferreira and Matos (2008) show that all institutional investors have a strong preference for the stock of large firms and firms with good governance. Foreign investors domiciled in countries with good corporate governance quality prefer good corporate governance firms in the US (Kim, Sung and Wei, 2011; Abdioglu et al., 2013). Based on these views, we argue that QFIIs, as selectively large institutional investors with global reputations, will invest more in firms with superior voluntary CSP. This leads us to the following:

H4a**:** *QFIIs invest more in firms with high voluntary CSP ratings than in those with low voluntary CSP ratings.*

H4b: *QFIIs are likely to increase their investment in firms with high voluntary CSP ratings.*

We empirically test the above-developed hypotheses with a set of control variables for ownership structure, corporate governance, compensation and other firm characteristics that may determine the institutional investment in our sample firms. The ownership structure of Chinese listed firms is characterised by a high proportion of SOEs, which may have an impact on the link between institutional investment and firms' voluntary CSP. A majority of managers see corporate governance as a necessary pillar for sustainable CSR in developing countries (Jamali, Safieddine and Rabbath, 2008). Corporate governance can positively moderate the association between corporate financial performance and CSR (Ntim and

Soobaroyen, 2013). Multiple configurations of corporate governance mechanisms interact and combine to impact firms' CSR behaviour (Jain and Jamali, 2016). Executive compensation can be an effective tool in aligning the interests of the firm manager and investors, resulting in more socially responsible firms (Bebchuk, Fried and Walker, 2002; Johnson and Greening, 1999; Kane, 2002; Zalewski, 2003).

RESEARCH METHODS

We developed several multivariate regression models to test H1a, H2a, H3a, and H4a developed in the previous section and identify the relationship between voluntary CSP and institutional investment in China.

$$Instutional\ Investment_t = \alpha_0 + \alpha_1 CSP_t + \alpha_2 MO_t + \alpha_3 SOE_t + \alpha_4 OLP_t + \alpha_5 Duality_t + \alpha_6 BSize_t + \alpha_7 MSize_t + \alpha_8 BIndep_t + \alpha_9 DSala_t + \alpha_{10} MSala_t + \alpha_{11} Bonus_t + \alpha_{12} Age_t + \alpha_{13} ROA_t + \alpha_{14} Lev_t + \alpha_{15} Size_t + \alpha_{16} Return_t + \alpha_{Ind} Inds \quad (1)$$

where $Instutional\ Investment_t$ is measured as the aggregate shareholdings of all institutional investors (IO_t), or shareholdings by mutual funds (MF_t), insurance companies and social security funds (LTI_t), or QFIIs ($QFII_t$), in year *t*. CSP_t is the SNAI CSR index score in year *t* (2007). MO_t is the percentage of managerial ownership in year *t*. SOE_t is a dummy variable for SOEs in year *t*, which equals 1 for SOEs and 0 for non-SOEs. OLP_t is the percentage of ordinary legal person ownership in year *t*.[xi] $Duality_t$ is a dummy variable that equals 1 if the Chief Executive Officer (CEO) and board chair are the same person, and 0 otherwise. $BSize_t$ is the natural logarithm of the total number of board directors. $MSize_t$ is the natural logarithm of the total number of executive managers. $BIndep_t$ is measured as the percentage of independent directors sitting on the board. $DSala_t$ is the natural logarithm of the average salary of the directors. $MSala_t$ is the natural logarithm of the average salary of the executive managers. $Bonus_t$ is the natural logarithm of the average bonus payment to the executive managers. Age_t is the natural logarithm of the firms' listing age. ROA_t is the return on assets. Lev_t is the total leverage ratio, calculated as the ratio of total debts to total assets. $Size_t$ is the

natural logarithm of the firms' total assets. $Return_t$ is year-end adjusted share return. *Inds* are a vector of dummy variables for different industries and $\alpha_{Ind} = (\alpha_{17}, \dots, \alpha_{31})$.

We estimate model (1) using ordinary least squares (OLS) regression. The dependent variables in model (1) are the shareholdings by different types of institutional investors, collectively and separately. The main variable of interest is CSP_t. According to prior literature, we control for ownership structure, corporate governance, managerial compensation, other firm characteristics and industries when testing our hypotheses. The ownership structure of a firm is reflected in three variables – managerial ownership (MO_t), state ownership (SOEs) and ordinary legal person ownership (OLP_t). Corporate governance is measured by four variables, i.e. CEO/board-chair role duality ($Duality_t$), board size ($BSize_t$), management size ($MSize_t$) and board independence ($BIndep_t$). Managerial compensation is indicated by three measurements – directors' salary ($DSala_t$), managerial salary ($MSala_t$) and bonus schemes ($Bonus_t$). In addition to ownership structure, corporate governance and managerial compensation, we also control other firm characteristics – firm age (Age_t), profitability (ROA_t), financial leverage (Lev_t) and firm size ($Size_t$). Adjusted share return ($Return_t$) is used to control for the market conditions. Finally, industry dummy variables (*Ind*) are included to account for the possibility that the institutional investment has been influenced by the general practice within, or government regulation of, certain industries.

Two approaches are used to test the effect of voluntary CSP on institutional investment in the subsequent year. One is to simply test the association between the published SNAI CSR rating (2007) and institutional investment levels in 2008. We include lagged values of the variables of interest to mitigate the simultaneity bias (Gupta, 2005) and allow for potential lagged effects of firms' voluntary CSP on subsequent institutional investment. We developed the following lead-lag regression model to test our hypotheses by

identifying the impacts of firms' CSP ratings on the institutional investment in the subsequent financial year:

$$Instutional\ Investment_{t+1} = \beta_0 + \beta_1 CSP_t + \beta_2 MO_{t+1} + \beta_3 SOE_{t+1} + \beta_4 OLP_{t+1} + \beta_5 Duality_{t+1} + \beta_6 BSize_{t+1} + \beta_7 MSize_{t+1} + \beta_8 BIndep_{t+1} + \beta_9 DSala_{t+1} + \beta_{10} MSala_{t+1} + \beta_{11} Bonus_{t+1} + \beta_{12} Age_{t+1} + \beta_{13} ROA_{t+1} + \beta_{14}\ Lev_{t+1} + \beta_{15} Size_{t+1} + \beta_{16} Return_{t+1}\ + \beta_{Ind} Inds \quad (2)$$

where the variables are defined similarly to those in model (1) and $\beta_{Ind} = (\beta_{17}, \dots, \beta_{31})$.

The other approach is more sophisticatedly designed to reflect the nature of the institutional investor, who may be able to identify investee firms with unexpectedly good voluntary CSP. We split the voluntary CSP of firms into two components – expected and unexpected. The unexpected voluntary CSP contains information surprises to institutional investors. We developed the following two-stage model:

$$\begin{cases} CSP_t = \theta_0 + \theta_1 MO_t + \theta_2 SOE_t + \theta_3 OLP_t + \theta_4 Duality_t + \theta_5 BSize_t + \theta_6 MSize_t + \theta_7 BIndep_t + \theta_8 DSala_t + \theta_9 MSala_t + \theta_{10} Bonus_t + \theta_{11} Age_t + \theta_{12} ROA_t + \theta_{13}\ Lev_t + \theta_{14} Size_t + \theta_{15} Return_t\ + \theta_{Ind} Inds + \varepsilon \\ Instutional\ Investment_{t+1} = \beta_0' + \beta_1' CSP_{Surprise,t} + \beta_2' MO_{t+1} + \beta_3' SOE_{t+1} + \beta_4' OLP_{t+1} + \beta_5' Duality_{t+1} + \beta_6' BSize_{t+1} + \beta_7' MSize_{t+1} + \beta_8' BIndep_{t+1} + \beta_9' DSala_{t+1} + \beta_{10}' MSala_{t+1} + \beta_{11}' Bonus_{t+1} + \beta_{12}' Age_{t+1} + \beta_{13}' ROA_{t+1} + \beta_{14}'\ Lev_{t+1} + \beta_{15}' Size_{t+1} + \beta_{16}' Return_{t+1}\ + \beta_{Ind}' Inds \end{cases} \quad (3)$$

Where, ε is the regression error in the first-stage regression. In the second-stage regression, $CSP_{Surprise\ t}$ is the estimated residual ($\hat{\varepsilon}$) from the linear regression for the voluntary CSP of the sample firms in year *t*; the other variables are defined in the same way as in the previous models.

In the first-stage equation of model (3), a firm's voluntary CSP is determined by the ownership structure, corporate governance, compensation and other firm characteristics in the same year, and its regression residual ($\hat{\varepsilon}$) is obtained to measure the unexpected voluntary CSP surprise. In the second-stage equation, we replace the firm's voluntary CSP in model (2) with its voluntary CSP surprise that cannot be explained by ownership structure, corporate governance, compensation and other firm or industry factors.

After considering the impacts of firms' voluntary CSP and surprise voluntary CSP on the institutional investment pattern in the same and subsequent years, it is natural to ask whether those things affect institutional trading behaviour. The fact that only one year's voluntary CSR rating is available allows us to test whether firms' voluntary CSP encourages institutional investors to increase their shareholdings subsequently, with little endogeneity concern. We test H1b, H2b, H3b and H4b on increases in institutional shareholdings using both the firms' voluntary CSP and the surprises in their voluntary CSP. It would be ideal to examine the purchase transactions of institutional investors, but they are unfortunately not available for our sample firms. Hence, we use increases in institutional investment as a proxy.

One approach is to simply analyse whether institutional investors are likely to increase their investment in firms with good voluntary CSP. Since the ownership stakes of managers, the state and ordinary legal persons, corporate governance and compensation levels are stable or sticky over two consecutive years, we only include the changes in firms' profitability, financial leverage and firm size in the regressions below. We have

$$Probit(+\Delta Instutional\ Investment_{t,t+1}) = \gamma_0 + \gamma_1 CSP_t + \gamma_2 \Delta ROA_{t,t+1} + \gamma_3 \Delta Lev_{t,t+1} + \gamma_4 \Delta Size_{t,t+1} + \gamma_5 Return_{t,t+1} + \gamma_{Ind} Inds \quad (4)$$

where $+\Delta Instutional\ Investment_{t,t+1}$ are four dummy variables, i.e. $+\Delta IO_{t,t+1}$, $+\Delta MF_{t,t+1}$, $+\Delta LTI_{t,t+1}$, and $+\Delta QFII_{t,t+1}$, indicating increases in institutional ownership in general or shareholdings by mutual funds, long-term institutional investors and QFIIs, respectively, from year *t* to year *t+1*; $\Delta ROA_{t,t+1}$ is the change in return on assets from year *t* to year *t+1*; $\Delta Lev_{t,t+1}$ is the change in financial leverage from year *t* to year *t+1*; $\Delta Size_{t,t+1}$ is the change in firm size from year *t* to year *t+1*; $Return_{t,t+1}$ is the annual share return from year *t* to year *t+1*; $\gamma_{Ind} = (\gamma_5, \dots, \gamma_{20})$.

Similarly, the other approach is to test whether institutional investors are likely to increase their investment in firms with voluntary CSP surprises. According to the efficient market hypothesis, investors only trade on unexpected information, as this type of

information affects the market performance of stocks whereas expected information has already been incorporated into share prices. We developed the following models to test whether institutional investors are likely to increase their investment in firms with voluntary CSP surprises:

$$CSP_t = \theta_0 + \theta_1 MO_t + \theta_2 SOE_t + \theta_3 OLP_t + \theta_4 Duality_t + \theta_5 BSize_t + \theta_6 MSize_t + \theta_7 BIndep_t + \theta_8 DSala_t + \theta_9 MSala_t + \theta_{10} Bonus_t + \theta_{11} Age_t + \theta_{12} ROA_t + \theta_{13} Lev_t + \theta_{14} Size_t + \theta_{15} Return_t + \theta_{Ind} Inds + \varepsilon$$

$$Probit(+\Delta Instutional\ Investment_{t,t+1}) = \theta_0' + \theta_1' CSP_{Surprise,t} + \theta_2' \Delta ROA_{t,t+1} + \theta_3' \Delta Lev_{t,t+1} + \theta_4' \Delta Size_{t,t+1} \quad (5)$$

where all variables are defined as in the previous models.

The first-stage equation of model (5) is the same as that for model (3). The second-stage equation of model (5) tests whether institutional investors increase their shareholding levels according to the unexpected voluntary CSP – the '*Surprises*' in firms' voluntary CSP.

SAMPLE SELECTION AND DATA COLLECTION

The initial sample includes 1,494 Chinese listed firms covered in the SNAI CSR index. Although the SNAI CSR index was officially published in 2008, it was generated based on the voluntary CSR disclosures of listed firms in 2007. Due to merger and acquisition transactions, 18 firms are excluded from the sample, which reduces the sample size to 1,476. Furthermore, 15 financial firms are excluded from the sample because their accounting system is different from that of other firms. This exclusion reduces our sample size to 1,461, out of which a further 31 firms with missing data were omitted from the regression analyses, leading to a final sample size of 1,430. This makes our sample size much larger than those of some prior studies (Gao, 2009; Zu and Song, 2009; Wang et al., 2011).

The SNAI CSR index system (2007) was formulated according to the SA8000 standard issued by Social Accountability International (SAI). The general motivation for issuing the CSR index was to encourage Chinese listed firms to make more CSR disclosures and improve firm value. The system attempts to provide a broad measure for CSR (Li and

Zhang, 2010), consists of most dimensions of CSR debated in the literature, and captures the full picture of firms' voluntary CSP. The index groups 36 questions into 8 categories: environment, energy-saving, employees, employment and promotion equality, social problems, customer satisfaction, other stakeholders, and law-abiding / ethics. Each criterion includes various sub-criteria, as illustrated in Appendix 2. Although the index provides scores for all the sub-criteria, no single measure for the eight criteria has been generated. To arrive at a single measure for these eight criteria, we calculate the weighted sum of the number-grade ratings for each attribute.

Institutional ownership and the identities of all types of institutional investors were collected from the database provided by Wind Information Co., Ltd. We collected the data on corporate governance from the annual reports of the listed companies. Firm-level accounting and market data were obtained from the Guo Tai An (GTA) and China Stock Market and Accounting Research (CSMAR) databases. Both databases have often been used in previous studies on Chinese stock market accounting and finance research (see Liu et al., 2014).

Table 1 reports descriptive statistics of all the variables used in the empirical analyses. We winsorise outlying observations of two variables (*ROA* and *Leverage*) at the top and bottom 1%. Panel A of Table 1 reports descriptive statistics of the aggregate institutional ownership and shareholdings by different types of institutional investors. Our sample firms have about 21.77% and 26.18% aggregate institutional ownership in year *t* and *t+1*, respectively. Panel B of Table 1 reports descriptive statistics of the SNAI CSR index (2007) and the disaggregated scores for each of the eight criteria. Panel C of Table 1 shows descriptive statistics for the ownership structure and corporate governance variables. Panel D of Table 1 reports descriptive statistics for compensation and other firm characteristics, including firm age, profitability, leverage, firm size, and share market performance.

Table 2 reports the correlation matrix of the variables used in the empirical analyses. The correlation results show that only investments by institutional investors (IO_t) and mutual funds (MF_t) are highly correlated, at 0.85 with a 1% significance level. Since we analyse these two variables separately, there is no concern over multicollinearity in our regression analyses.

EMPIRICAL TESTS

Table 3 report the regression results for model (1). We exclude one industry dummy, *Ind16* (Conglomerate), from the regressions and use this as the reference industry. The reported regression results for the linear model (1) show that institutional investment is generally higher in firms with better voluntary CSP after controlling for corporate governance, compensation, ownership structure and other firm characteristics. Therefore, the empirical results reported in Table 3 support our prediction in H1a. Similarly to Liu et al. (2014), we find institutional investors generally show no preference for firms whose CEO and board chair are the same person. Institutional investors overall hold a higher percentage of shares in Chinese firms with large sizes of management teams and fewer independent directors. The negative association between institutional investment and board independence is opposite to the evidence from developed countries. For instance, Khurshed, Lin and Wang (2011) find institutional investors in the UK invest more in firms with more independent (non-executive) directors. The negative relation between institutional investment and board independence may suggest sceptism over the monitoring role of independent directors in China, and that it is viewed negatively by institutional investors in their decision making. Institutional investors also invest more in firms with high managerial salaries. As for financial characteristics, institutional investors in China hold a high level of shareholdings in large firms, firms with high leverage ratios, and those with superior market performance.

The investment pattern of the institutional investors is largely determined by the domestic mutual funds. Mutual funds invest more in firms with better voluntary CSP, supporting our prediction in H2a. Mutual funds also prefer firms with higher managerial ownership, higher managerial salaries, of a larger size and with more financial leverage but invest less in firms with more independent directors. However, institutional investors generally invest more in firms in which ordinary legal persons (*OLP*) hold a high percentage of shares but mutual funds invest less in such firms. Mutual funds in China, similarly to those in developed economies, prefer investing in stocks with superior market performance.

Long-term institutional investors (insurance companies and social security funds) invest more in firms with a smaller board size but a larger firm size. We also observe a positive association between the shareholding level of these long-term institutional investors in a firm, and the firm's stock market performance.

However, it is a surprise to observe that foreign institutional investors (*QFIIs*) invest more in firms with role duality of CEO and board chair because extant literature suggests that such duality indicates poor corporate governance. The empirical results for QFIIs also show that they invest more in firms with well-paid managers. These findings suggest that foreign institutional investors, even coming from countries with high corporate governance standards, show no preference for firms with higher corporate governance status or fairness in managerial compensation when investing in emerging markets. Our empirical evidence on foreign institutional investors' investment behaviour in China is surprisingly counter to the implications of prior literature (Ferreira and Matos, 2008; Aggarwal et al., 2011). Ferreira and Matos (2008) find that institutional investors prefer large and liquid stocks in firms with good corporate governance practice, especially in countries where country-level investor protection and quality of institutions are weak. Aggarwal et al. (2011) argue that foreign institutional investors from countries with strong shareholder protection play a role in

promoting governance in their investee companies abroad. However, based on our empirical evidence, it seems that the Chinese government's hope that these reputable foreign institutional investors might improve the corporate governance of Chinese firms is not being met.

The regression results for model (2) reported in Table 4 are generally consistent with those reported in Table 3. Institutional investors in general hold high levels of shareholdings in the subsequent year, in firms with superior voluntary CSP in the current year. Mutual funds and QFIIs in particular determine this investment pattern of institutional investors. The results for other control variables are largely consistent with those reported in Table 3, with a few exceptions. For instance, long-term institutional investors invest less in SOEs. Institutional investors, especially mutual funds, do not make large equity investments in firms with large sizes of management teams. Moreover, we observe that institutional investors in general, and mutual funds in particular, invest more in firms with more managerial ownership, consistent with the argument in prior literature that managerial ownership suggests an alignment between the interests of managers and investors. Institutional investors perceive managerial ownership as an efficient corporate governance mechanism in TEEs such as China. Furthermore, the positive association between institutional investment and managerial ownership may reflect the trust between institutional investors and firm managers, which may also lead to a positive link between institutional investment and managerial salaries. Mutual funds invest more in firms whose managers and directors are well paid.

Table 5 reports regression results for the two-stage model (3). The first column of Table 5 shows results for the first-stage regression. In the second-stage regressions we replace firms' voluntary CSP with surprises in voluntary CSP, measured as the regression

residuals from the first stage. Therefore, voluntary CSP surprises capture the unexpected component in voluntary CSP that cannot be explained by corporate governance, compensation, ownership structure and other firm characteristics. The second-stage regression results show that institutional investors in general, and mutual funds and QFIIs in particular, invest more in firms with greater voluntary CSP surprises. The results for the other variables are consistent with those reported in Table 4.

We now move on to testing whether institutional investors are likely to increase their investment in firms with superior voluntary CSP. Table 6 reports regression results for model (4), testing this likelihood. In support of H2b, H3b and H4b, we find major types of institutional investors in China – mutual funds, long-term domestic institutional investors (insurance companies and social security funds) and QFIIs – are likely to increase their investment in firms with superior voluntary CSP. The likelihood of increased investment in the subsequent year increases by 1% if the voluntary CSP ranking is one point higher. However, other types of institutional investors may not increase their investment in firms with superior voluntary CSP, and some institutional investors with short-term investment horizons may even sell shares in these firms for transient profits. This may be a plausible explanation for the finding of an insignificant link between the likelihood of increased aggregate institutional ownership and firms' voluntary CSP. Our H1b is therefore rejected based on the empirical evidence in Table 6. As for the other variables, increases in financial leverage and stock market performance significantly enhance the likelihood of investment by mutual funds.

Alternatively, we test the likelihood that institutional investors increase their investment in firms with voluntary CSP surprises. Table 7 reports regression results from the two-stage model (5). The results of the first-stage regression are the same as those reported in

the first column of Table 5. In the second-stage regression, we test whether voluntary CSP surprises enhance the likelihood of increases in institutional investment, and find that only mutual funds are likely to increase their investment in firms with voluntary CSP surprises. This finding, when combined with those from Table 5, implies that, although mutual funds and QFIIs value voluntary CSP, only mutual funds are likely to trade on unexpected voluntary CSP surprises. The coefficients of voluntary CSP surprises are still positive for long-term institutional investors and QFIIs but no longer significant, which may be attributable to the low trading volumes of these types of institutional investors, whose equity stakes in the Chinese stock market are much smaller than those of mutual funds. The coefficients for the control variables are consistent with those reported in Table 6.

FURTHER ANALYSES

According to Panel A of Table 1, the aggregate institutional ownership is about 21-26% in 2007 and 2008. The shareholdings of most of the institutional investors are lower than 5%, a common threshold used in previous studies (Chung et al., 2002; Dechow et al., 1996) to identify institutional investors that play a significant role in constraining managerial discretion in the US. The influencing power of institutional investors with less than 5% ownership, over investee firms' CSP, is unlikely to be material unless they form a coalition. However, according to Xi (2006), the collective action problem and natural rivalry among institutional investors create barriers to co-operation.

Although we believe our empirical results are not affected by the reverse causality problem, we conduct 2SLS regressions to address the concern of a possible influence from institutional investors over firms' CSP. The ideal approach would be to employ an instrumental variable strategy to address the endogeneity concern. However, it is common in corporate governance research that the data do not provide plausible valid instruments

(Wintoki, Linck and Netter, 2012). We notice that board gender diversity has a positive impact on the CSR ratings of Chinese firms (McGuinness, Vieito and Wang, 2017) but no significant impact on institutional investment has been evidenced in prior literature. As such we use board gender diversity as the instrumental variable in our 2SLS regressions to further address the endogeneity concern. The following 2SLS regression models were developed:

$$CSP_t = \lambda_0 + \lambda_1 FD_t + \lambda_2 Age_t + \lambda_3 ROA_t + \lambda_4\, Lev_t + \lambda_5 Size_t + \lambda_{Ind} Inds$$

$$Instutional\ Investment_{t+1} = \lambda_0^{'} + \lambda_1^{'}\widehat{CSP_t} + \lambda_2^{'} MO_{t+1} + \lambda_3^{'} SOE_{t+1} + \lambda_4^{'} OLP_{t+1} + \lambda_5^{'} Duality_{t+1} + \lambda_6^{'} BSize_{t+1} + \lambda_7^{'} MSize_{t+1} + \lambda_8^{'} BIndep_{t+1} + \lambda_9^{'} DSala_{t+1} + \lambda_{10}^{'} MSala_{t+1} + \lambda_{11}^{'} Bonus_{t+1} + \lambda_{12}^{'} Age_{t+1} + \lambda_{13}^{'} ROA_{t+1} + \lambda_{14}^{'}\, Lev_{t+1} + \lambda_{15}^{'} Size_{t+1} + \lambda_{16}^{'} Return_{t+1} + \lambda_{Ind}^{'} Inds \quad (6)$$

where FD_t is the percentage of female directors on the board, and the other variables are defined as in models (1-5).

Table 8 reports the 2SLS regression results. The results of the first-stage regression suggest that firms with more female directors sitting on boards have superior CSP. The second-stage regression results show that firms' CSP has significantly positive impacts on the investment levels of different types of institutional investors, jointly or separately, after controlling for the reverse causality problem.

A good aggregate CSR rating will include a consistent range of important social issues that are uniformly measured across a wide range of companies (Graves and Waddock, 1994). Carroll (1979) emphasises the fundamentally multidimensional nature of the CSR rating construct. Griffin and Mahon (1997) suggest that firms' CSP should be disaggregated into its individual components so as to avoid the information losses associated with aggregation into a single construct. Following this suggestion, we conduct further analyses on the eight constituent constructs of the SNAI CSR index that reflect specific dimensions of the overall CSR ratings of our sample firms.

As discussed earlier, the SNAI CSR index comprises data concerning eight criteria: environment, energy-saving, employees, equality, social, customers, stakeholders, and law-abiding/ ethics. We manually calculate the weighted sum of scores for each CSP criteria and use them to analyse whether and how institutional investors are related to the constituent components of firms' voluntary CSP.

We replace the independent variable (CSP) of model (2) with the voluntary CSP scores for each of the eight criteria to analyse associations between the eight criteria and different types of institutional investors. The regressions results are reported in Table 9. Our further tests for the disaggregated voluntary CSP suggest that mutual funds invest more in firms achieving higher voluntary CSP with respect to equality and customers, but less in those doing well at saving energy. Again, the investment pattern of institutional investors in general is driven by mutual funds. Insurance companies and social security funds invest more in firms that take care of their customers. QFIIs are the only type of institutional investors that prefer investing in firms that achieve better CSP in terms of saving energy. The regression results for the other variables are the same as those reported in Table 4.

We further replace the aggregate voluntary CSP in model (4) by the voluntary CSP scores for each of the eight criteria, to analyse the impact of the eight aspects of voluntary CSP on the likelihood of increased institutional investment. The regressions results are reported in Table 10. We observe that mutual funds are likely to increase their investment in firms that have better voluntary CSP in terms of the environment and customers, but are likely to decrease their investment in those doing better at saving energy. Domestic insurance companies and social security funds (LTIs) are likely to increase their investment in firms taking better care of their customers. However, QFIIs are likely to increase their investment

in firms doing better at saving energy and taking care of society. The regression results for the other variables are the same as those reported in Table 6.

CONCLUSIONS

This study investigates the pattern of institutional investment in China and whether listed firms' voluntary CSP has shaped investment by institutional investors in general, and mutual funds, insurance companies, social security funds and QFIIs in particular. Our empirical evidence, obtained by analysing a sample of 1,430 listed companies in China, shows that institutional investments in current and subsequent years are positively associated with firms' voluntary CSP. Mutual funds are the main driver of this investment pattern of domestic institutional investors. Both mutual funds and QFIIs invest more in firms with better voluntary CSP or with more surprises in voluntary CSP that cannot be explained by the firm's corporate governance, ownership structure and other firm characteristics. Mutual funds, insurance companies, social security funds and QFIIs are likely to increase their investment in firms with superior voluntary CSP. Our 2SLS regression results show that, after controlling for the endogenous effect of institutional investment, firms' CSP has significant impacts on the shareholding levels of different types of institutional investors, collectively and separately.

Furthermore, we find that the unexpected component of voluntary CSP, i.e. surprises, contains valuable information for institutional investors. Institutional investment by mutual funds, insurance companies, social security funds and QFIIs is significantly higher in firms with more surprises in voluntary CSP, in the year after the CSP became public information. Particularly, domestic mutual funds are likely to increase their investment in firms with surprises in their voluntary CSP. This finding suggests that positive surprises in CSP are detected and valued by institutional investors in the Chinese equity market.

Our additional tests on the disaggregated voluntary CSP suggest that mutual funds invest more in firms achieving higher voluntary CSP with respect to equality and customers but less in those doing well at saving energy. Insurance companies and social security funds invest more in firms that take care of their customers. QFIIs are the only type of institutional investors that prefer to invest in firms achieving better CSP in terms of saving energy.

The empirical evidence shows that firms' voluntary CSP generally attracts more investment from institutional investors, especially domestic mutual funds and QFIIs. However, different from the evidence from developed markets, so-called long-term institutional investors (insurance companies and social security funds) do not show consistent evidence of preferring to invest in firms with good voluntary CSP. Our tests on the eight constituent components of voluntary CSP suggest that institutional investors have heterogeneous preferences for the various dimensions of firms' voluntary CSP. Domestic institutional investors pay more attention to firms' voluntary CSP with regards to customers, whereas only QFIIs prefer investing in firms with good voluntary CSP with regards energy-saving. These findings reflect that environmental and energy issues are still overlooked by domestic institutional investors.

Our findings in this paper contribute to the literature on the link between institutional investors and the voluntary CSP of firms in an emerging market – China. We find that, consistent with prior evidence from developed economies, institutional investors are attracted to firms with superior voluntary CSP. In other words, firms' voluntary CSP does shape institutional investment in an emerging market. Domestic institutional investors such as mutual funds, rather than foreign, are driving this investment pattern of institutional investors. Foreign institutional investors invest more in firms with better voluntary CSP, which may further foster the awareness of CSR issues and raise concerns on energy-saving and environmental issues in developing countries. However, foreign institutional investors do not

show a significant preference towards firms with better corporate governance mechanisms in emerging economies.

Our paper therefore offers important implications for policy makers in emerging countries. According to our results, social security funds that are regulated and controlled by the Chinese government invest more in firms with better CSP in terms of respect for employees. QFIIs, as respectful global institutional investors selected by the Chinese government, also invest more in Chinese listed firms with better CSP, particularly with regards energy-saving and social issues. These findings suggest that the governments of emerging countries can foster the CSP of firms in their domicile via their agent investors or by monitoring foreign institutional investors.

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Table 1: Descriptive Statistics

Variables	Mean	Std. Deviation	Min	Max
Panel A: Institutional Investment				
IO_t (Institutional Ownership)	21.77	20.47	0.00	100.00
IO_{t+1}	26.18	21.26	0.00	100.00
MF_t (Mutual Funds)	17.68	19.23	0.00	85.14
MF_{t+1}	16.15	17.89	0.00	77.98
IC_t (Insurance Companies)	2.75	2.60	0.17	20.57
IC_{t+1}	2.99	2.73	0.22	17.91
SSF_t (Social Security Funds)	3.43	2.82	0.46	16.22
SSF_{t+1}	2.62	2.29	0.16	11.20
$QFII_t$	3.12	3.14	0.20	16.71
$QFII_{t+1}$	2.36	2.32	0.16	16.06
Panel B: CSP				
CSP_t (Total CSR Score)	27.91	11.25	-1.32	76.34
C1 (Environment score)	2.04	2.79	-4.12	21.43
C2 (Energy-saving score)	2.03	2.75	0.00	17.31
C3 (Employees score)	7.62	2.22	1.65	15.66
C4 (Equality score)	2.84	1.51	0.00	9.07
C5 (Social score)	0.94	1.22	-1.65	11.54
C6 (Customers score)	3.35	2.32	-2.47	14.01
C7 (Stakeholders score)	5.97	6.81	-13.19	25.56
C8 (Law-abiding and Ethics)	3.38	1.37	-3.30	11.54
Panel C: Ownership Structure and Corporate Governance				
MO_t	3.31	11.61	0.00	75.00
SOE_t	0.61	0.49	0.00	1.00
OLP_t (Ordinary Legal Persons)	9.95	10.11	0.13	86.38
$Duality_t$	0.15	0.35	0	1
$BSize_t$	9.06	2.42	0	18
$MSize_t$	5.94	2.55	0.00	22.00
$BIndep_t$	35.07	7.40	0.00	66.67
Panel D: Compensation and other Firm Characteristics				
$DSalary_t$	806994.7	932085.3	0	13900000
$MSalary_t$	926369.3	993932.5	0	15700000
$Bonus_t$	14060.95	62466.54	0.00	805000.00
Age_t	13.55	4.18	2.14	27.56
ROA_t	0.02	0.24	-4.25	0.43
ROA_{t+1}	-0.05	0.96	-18.92	0.50
Lev_t	0.51	0.20	0.00	1
Lev_{t+1}	0.50	0.20	0.02	1
$Size_t$	21.36	1.40	0.00	26.25
$Size_{t+1}$	21.45	1.33	10.84	26.57
$Return_{t+1}$	-0.02	0.03	-0.10	0.10
$Return_{t,t+1}$	-0.58	0.22	-0.87	4.10

Note: $BSize_t$, $MSize_t$, $DSala_t$, $MSala_t$, $Bonus_t$, Age_t, $Size_t$ and $Size_{t+1}$ are original numbers before taking natural logarithms.

Table 2: Correlation Matrix

	CSP_t	IO_t	MF_t	LTI_t	$QFII_t$	MO_t	SOE_t	OLP_t	$Duality_t$	$BSize_t$	$MSize_t$	$BIndep_t$	$DSalary_t$	$MSalary_t$	$Bonus_t$	Age_t	ROA_t	Lev_t	$Size_t$
IO_t	0.19[a]																		
MF_t	0.20[a]	0.85[a]																	
LTI_t	0.07[a]	0.33[a]	0.29[a]																
$QFII_t$	0.05[b]	0.18[a]	0.11[a]	0.03															
MO_t	0.09[a]	-0.06[b]	0.00	0.00	-0.02														
SOE_t	0.09[a]	0.12[a]	0.11[a]	0.06[b]	0.03	-0.34[a]													
OLP_t	0.00	0.46[a]	-0.05[c]	0.00	0.05[c]	-0.13[a]	0.04												
$Duality_t$	-0.05[c]	-0.05[b]	-0.04	-0.02	0.03	0.11[a]	-0.14[a]	-0.04											
$BSize_t$	0.09[a]	0.06[b]	0.05[c]	-0.03	0.03	-0.05[b]	0.11	0.04[c]	-0.03										
$MSize_t$	0.15[a]	0.09[a]	0.10[a]	0.03	0.02	0.00	0.16[a]	0.00	0.01	0.55[a]									
$BIndep_t$	0.04	-0.06[b]	-0.04	-0.03	-0.01	0.03	-0.03	-0.04	0.04	0.50[a]	0.44[a]								
$DSalary_t$	0.08[a]	0.11[a]	0.12[a]	0.04	0.03	0.06[b]	-0.04[c]	0.03	0.03	0.07[a]	0.12[a]	0.01							
$MSalary_t$	0.15[a]	0.25[a]	0.23[a]	0.07[a]	0.08[a]	-0.01	0.10[a]	0.08[a]	0.01	0.10[a]	0.14[a]	0.03	0.48[a]						
$Bonus_t$	0.02	-0.01	-0.03	-0.02	0.00	-0.02	-0.02	0.04	0.00	0.02	0.03	0.01	0.04	0.04					
Age_t	-0.01	0.02	0.03	-0.01	-0.01	0.02	-0.02	-0.01	0.05[c]	-0.02	-0.06[b]	0.03	0.03	0.02	0.01				
ROA_t	0.06[b]	0.03	0.01	0.03	0.02	0.01	0.05[c]	0.02	-0.05[b]	0.01	0.04	-0.01	-0.02	0.00	0.00	0.01			
Lev_t	-0.07[a]	-0.00	-0.00	-0.01	-0.02	-0.17[a]	0.07[b]	0.01	0.01	0.04	0.01	-0.03	0.01	0.03	0.01	-0.03	-0.01		
$Size_t$	0.31[a]	0.38[a]	0.38[a]	0.14[a]	0.06[b]	-0.14[a]	0.31[a]	0.08[a]	-0.10[a]	0.15[a]	0.18[a]	0.01	0.19[a]	0.30[a]	-0.02	0.00	0.20[a]	-0.27[a]	
$Return_t$	0.06[b]	0.18[a]	0.16[a]	0.08[a]	0.04	0.18[a]	-0.06[b]	0.08[a]	-0.06[b]	0.03	0.04	0.01	0.09[a]	-0.07[b]	-0.02	0.01	-0.00	0.02	0.01

Notes:
1. P values are reported in parentheses. a, b, and c indicate significance levels at 10%, 5% and 1%, respectively, for *t* tests.
2. Please refer to Appendix 1 for the definition of variables.

Table 3: Does better voluntary CSP attract more institutional investment simultaneously?

	IO_t	MF_t	LTI_t	$QFII_t$
Constant	-11.10***	-10.06***	-2.71*	-1.15
	(-7.93)	(-8.02)	(-2.00)	(-0.98)
CSP_t	0.11**	0.09**	0.00	0.00
	(2.97)	(2.68)	(0.80)	(1.32)
MO_t	0.04	0.09	0.00	0.00
	(1.00)	(0.37)	(0.31)	(0.56)
SOE_t	0.01	-0.11	0.06	0.00
	(0.01)	(-0.11)	(0.63)	(0.03)
OLP_t	0.90***	-0.13**	-0.00	0.00
	(19.91)	(-3.12)	(-0.24)	(1.29)
$Duality_t$	-0.59	-0.50	-0.03	0.15
	(-0.47)	(-0.42)	(-0.23)	(1.44)
$BSize_t$	-0.14	-0.06	-0.23†	0.09
	(-0.11)	(-0.05)	(-1.89)	(0.84)
$MSize_t$	2.18*	2.09†	0.15	-0.02
	(2.08)	(1.91)	(1.34)	(-0.21)
$BIndep_t$	-0.22**	-0.20**	0.00	0.00
	(-3.09)	(-3.21)	(-0.65)	(-0.71)
$DSalary_t$	-0.18	-0.09	0.00	0.00
	(-0.89)	(-0.46)	(0.02)	(-0.19)
$MSalary_t$	1.92***	1.66***	0.03	0.06†
	(4.96)	(4.54)	(0.84)	(1.99)
$Bonus_t$	-2.08	-2.27	-0.13	-0.04
	(-1.33)	(-1.53)	(-0.88)	(-0.30)
Age_t	0.94	1.04	-0.02	-0.03
	(1.13)	(1.32)	(-0.27)	(-0.36)
ROA_t	-4.38**	-4.83**	-0.04	0.05
	(-2.32)	(-2.71)	(-0.24)	(0.32)
Lev_t	-5.79**	-4.63*	-0.18	-0.13
	(-2.48)	(2.10)	(-0.79)	(-0.65)
$Size_t$	4.72***	4.48***	0.14***	0.01
	(12.33)	(12.37)	(3.70)	(0.31)
$Return_t$	0.47**	0.37*	0.05***	-0.01
	(2.94)	(2.44)	(3.25)	(-0.40)
Industry	Controlled	Controlled	Controlled	Controlled
No. of Obs.	1430	1430	1430	1430
Adjusted R^2	36.72%	19.61%	2.29%	1.01%

Notes:

1. †, *,**, and *** indicate significance levels at 10%, 5% ,1% and 0.1%, respectively, for *t* tests.
2. Please refer to Appendix 1 for the definition of variables.

Table 4: Does better voluntary CSP lead to more institutional investment subsequently?

	IO_{t+1}	MF_{t+1}	LTI_{t+1}	$QFII_{t+1}$
Constant	-9.78***	-9.37***	-4.45***	-0.84
	(-7.40)	(-7.53)	(-3.26)	(-1.25)
CSP_t	0.07*	0.06†	0.00	0.01*
	(2.08)	(1.86)	(0.58)	(2.12)
MO_{t+1}	0.07†	0.07*	0.00	0.01
	(1.68)	(2.06)	(0.20)	(0.15)
SOE_{t+1}	-0.11	-0.01	-0.22*	0.01
	(-0.11)	(-0.01)	(-2.05)	(0.15)
OLP_{t+1}	0.89***	-0.11***	-0.01*	0.00
	(30.96)	(-3.96)	(-2.36)	(0.38)
$Duality_{t+1}$	1.05	1.08	0.06	0.10
	(0.88)	(0.97)	(0.45)	(1.61)
$BSize_{t+1}$	0.57	0.25	-0.13	0.00
	(0.48)	(0.23)	(-1.03)	(-0.03)
$MSize_{t+1}$	1.05	1.08	-0.04	-0.01
	(0.95)	(1.08)	(-0.36)	(-0.26)
$BIndep_{t+1}$	-0.16*	-0.13*	0.00	0.00
	(-2.34)	(-2.17)	(-0.03)	(-0.38)
$DSalary_{t+1}$	0.24	0.28†	0.03	-0.01
	(1.29)	(1.68)	(1.54)	(-1.13)
$MSalary_{t+1}$	0.72†	0.72*	0.00	0.02
	(1.90)	(2.08)	(-0.04)	(1.11)
$Bonus_{t+1}$	-0.67	-0.86	-0.03	0.02
	(-0.45)	(-0.63)	(-0.17)	(0.22)
Age_{t+1}	0.99	0.96	-0.09	-0.04
	(1.25)	(1.23)	(-1.02)	(-0.92)
ROA_{t+1}	-0.38	-0.53	0.02	0.01
	(-0.34)	(-0.52)	(0.20)	(0.16)
Lev_{t+1}	-1.99	-2.30	-0.22	-0.17†
	(-0.99)	(-1.24)	(-1.00)	(-1.66)
$Size_{t+1}$	4.48***	4.08***	0.26***	0.05**
	(11.82)	(11.65)	(6.18)	(2.40)
$Return_{t+1}$	0.89***	0.75***	0.04**	0.01
	(5.83)	(5.36)	(2.64)	(1.44)
Industry	Controlled	Controlled	Controlled	Controlled
No. of Obs.	1430	1430	1430	1430
Adjusted R^2	50.16%	18.13%	5.60%	0.94%

Notes:

1. †, *,**, and *** indicate significance levels at 10%, 5% ,1% and 0.1%, respectively, for *t* tests.
2. Please refer to Appendix 1 for the definition of variables.

Table 5: Does voluntary CSP surprises lead to more institutional investment subsequently?

Stage 1:	CSP_t	Stage 2:	IO_{t+1}	MF_{t+1}	LTI_{t+1}	$QFII_{t+1}$
Constant	-49.86***	Constant	-100.03***	-93.82***	-4.80***	-0.95
	(-4.85)		(-7.57)	(-7.68)	(-3.26)	(-1.44)
		$CSP_{Surprise,t}$	0.06†	0.05†	0.00	0.00*
			(1.79)	(1.65)	(0.34)	(2.03)
MO_t	0.12***	MO_{t+1}	0.04	0.05	0.00	0.00
	(3.98)		(1.02)	(1.45)	(-0.55)	(0.41)
SOE_t	-0.63	SOE_{t+1}	0.00	0.08	-0.21*	0.01
	(-0.83)		(0.00)	(0.09)	(-2.02)	(0.25)
OLP_t	0.01	OLP_{t+1}	0.88***	-0.12***	-0.01**	0.00
	(-0.15)		(30.73)	(-4.42)	(-2.58)	(0.28)
$Duality_t$	-1.77†	$Duality_{t+1}$	0.62	0.71	-0.08	0.09
	(-1.90)		(0.52)	(0.65)	(-0.60)	(1.45)
$BSize_t$	0.53	BS_{t+1}	0.32	0.04	-0.15	0.00
	(0.57)		(0.27)	(0.04)	(-1.13)	(-0.08)
$MSize_t$	1.73*	MS_{t+1}	1.18	1.23	-0.04	-0.01
	(2.02)		(1.08)	(1.22)	(-0.33)	(-0.14)
$BIndep_t$	-0.01	ID_{t+1}	-0.15*	-0.13*	0.00	0.00
	(-0.22)		(-2.21)	(-2.05)	(-0.18)	(-0.38)
$DSalary_t$	-0.13	$DSalary_{t+1}$	0.19	0.24	0.02	-0.01
	(-0.85)		(1.00)	(1.38)	(1.20)	(-1.20)
$MSalary_t$	0.52†	$MSalary_{t+1}$	0.72†	0.72*	0.00	0.02
	(1.81)		(1.93)	(2.10)	(-0.08)	(1.14)
$Bonus_t$	2.04†	$Bonus_{t+1}$	-0.36	-0.54	-0.02	0.02
	(1.76)		(-0.25)	(-0.40)	(-0.13)	(0.30)
Age_t	-0.34	Age_{t+1}	0.79	0.87	-0.09	-0.05
	(-0.55)		(1.01)	(1.20)	(-1.04)	(-1.20)
ROA_t	-1.09	ROA_{t+1}	-0.33	-0.49	0.03	0.01
	(-0.78)		(-0.30)	(-0.48)	(0.22)	(0.17)
Lev_t	-6.06***	Lev_{t+1}	-2.13	-2.42	0.21	-0.17†
	(-3.84)		(-1.07)	(-1.32)	(0.97)	(-1.67)
$Size_t$	3.17***	$Size_{t+1}$	4.69***	4.25***	0.27***	0.05**
	(11.71)		(13.06)	(12.80)	(6.64)	(3.04)
		$Return_{t+1}$	0.89***	0.75***	0.04**	0.01
			(5.82)	(5.35)	(2.65)	(1.43)
Industry	Controlled	*Industry*	Controlled	Controlled	Controlled	Controlled
No. of Obs.	1430	No. of Obs.	1430	1430	1430	1430
Adjusted R^2	19.60%	Adjusted R^2	50.13%	18.10%	5.59%	0.93%

Notes:

1. *,**, and *** indicate significance levels at 10%, 5% and 1%, respectively, for *t* and for *z* tests.
2. Please refer to Appendix 1 for the definition of variables.

Table 6: Are institutional investors likely to increase investments in firms with better voluntary CSP?

	Prob(+$\Delta IO_{t,t+1}$)	Prob(+$\Delta MF_{t,t+1}$)	Prob(+$\Delta LTI_{t,t+1}$)	Prob(+$\Delta QFII_{t,t+1}$)
Constant	-0.05	-4.76	-5.01	-5.15
	(-0.05)	(-0.06)	(-0.04)	(-0.03)
CSP_t	0.00	0.01***	0.01***	0.01***
	(0.09)	(3.89)	(4.17)	(3.02)
$\Delta ROA_{t,t+1}$	0.01	-0.05	0.02	0.15
	0.18	(-0.60)	(0.22)	(1.03)
$\Delta Lev_{t,t+1}$	0.37**	0.40***	-0.07	0.08
	(2.82)	(4.69)	(-0.43)	(0.36)
$\Delta Size_{t,t+1}$	-0.08	-0.09	0.07	0.08
	(-1.31)	(-0.64)	(1.35)	(1.26)
$Return_{t,t+1}$	1.04***	1.00***	-0.03	0.25
	(6.35)	(6.10)	(-1.14)	(1.03)
Industry	Controlled	Controlled	Controlled	Controlled
No. of Obs.	1430	1430	1430	1430
LR χ^2	72.13	56.96	46.78	22.14

Notes:

1. †, *,**, and *** indicate significance levels at 10%, 5% ,1% and 0.1%, respectively, for *z* tests reported in parentheses.
2. LR χ^2 is the likelihood ratio χ^2 for Probit regressions.
3. $Return_{t,t+1}$ is the annual adjusted share return from year *t* to year *t+1*. Please refer to Appendix 1 for the definition of other variables.

Table 7: Are institutional investors likely to increase investments in firms with voluntary CSP surprises?

Stage 1:	CSP_t	Stage 2:	Prob($+\Delta IO_{t,t+1}$)	Prob($+\Delta MF_{t,t+1}$)	Prob($+\Delta LTI_{t,t+1}$)	Prob($+\Delta QFII_{t,t+1}$)
Constant	-49.86***	Constant	0.59	-4.73	-4.71	-4.84
	(-4.85)		(0.67)	(-0.04)	(0.04)	(-0.03)
MO_t	0.12***	$CSP_{Surprise,t}$	0.00	0.01*	0.00	0.01
	(3.98)		(0.13)	(1.92)	(1.16)	(1.29)
SOE_t	-0.63	$\Delta ROA_{t,t+1}$	0.02	-0.06	0.01	0.13
	(-0.83)		(0.20)	(-0.73)	(0.08)	(0.88)
OLP_t	0.01	$\Delta Lev_{t,t+1}$	0.36***	0.38***	-0.09	0.07
	(-0.15)		(2.80)	(4.57)	(-0.58)	(0.30)
$Duality_t$	-1.77†	$\Delta Size_{t,t+1}$	-0.07	-0.11	0.07	0.04
	(-1.90)		(-1.30)	(-0.77)	(1.26)	(0.54)
$BSize_t$	0.53	$Return_{t,t+1}$	1.05***	1.01***	0.06	0.24
	(0.57)		(6.38)	(6.12)	(0.27)	(0.96)
$MSize_t$	1.73*					
	(2.02)					
$BIndep_t$	-0.01					
	(-0.22)					
$DSalary_t$	-0.13					
	(-0.85)					
$MSalary_t$	0.52†					
	(1.81)					
$Bonus_t$	2.04†					
	(1.76)					
Age_t	-0.34					
	(-0.55)					
ROA_t	-1.09					
	(-0.78)					
Lev_t	-6.06***					
	(-3.84)					
$Size_t$	3.17***					
	(11.71)					
Industry	Controlled	*Industry*	Controlled	Controlled	Controlled	Controlled
No. of Obs.	1430	No. of Obs.	1430	1430	1430	1430
Adjusted R^2	20.49%	LR χ^2	71.76	54.34	32.77	14.99

Notes:

1. *t* test scores are reported in parentheses of stage 1 regression and *z* test scores are reported in parentheses of stage 2 regressions. †, *,**, and *** indicate significance levels at 10%, 5% ,1% and 0.1%, respectively.
2. LR χ^2 is the likelihood ratio Chi^2 for Probit regressions.
3. Please refer to Appendix 1 for the definition of variables.

Table 8: 2SLS Regression Results

	IO_{t+1}	MF_{t+1}	LTI_{t+1}	$QFII_{t+1}$
Constant	-69.14***	-68.27***	-1.78	-0.74
	(-3.52)	(-3.82)	(-0.82)	(-0.82)
CSP_t	0.59*	0.49*	0.06*	0.00
	(2.32)	(2.11)	(2.02)	(0.40)
MO_{t+1}	-0.04	-0.01	-0.01†	0.00
	(-0.72)	(-0.26)	(-1.68)	(0.07)
SOE_{t+1}	-0.49	-0.32	-0.26*	0.01
	(-0.47)	(-0.34)	(-2.26)	(0.14)
OLP_{t+1}	0.87***	-0.12***	-0.01**	0.00
	(28.36)	(-4.36)	(-2.61)	(0.25)
$Duality_{t+1}$	1.50	1.44	0.00	0.09
	(1.14)	(1.20)	(0.03)	(1.52)
$BSize_{t+1}$	0.09	-0.15	-0.17	-0.01
	(0.07)	(-0.13)	(-1.22)	(-0.12)
$MSize_{t+1}$	0.29	0.49	-0.12	-0.02
	(0.24)	(0.44)	(-0.92)	(-0.27)
$BIndep_{t+1}$	-0.15*	-0.13*	0.00	0.00
	(-2.07)	(-1.94)	(-0.18)	(-0.38)
$DSalary_{t+1}$	0.17	0.22	0.02	-0.01
	(0.86)	(1.23)	(1.06)	(-1.23)
$MSalary_{t+1}$	0.57	0.60†	-0.02	0.02
	(1.43)	(1.65)	(-0.37)	(1.05)
$Bonus_{t+1}$	-1.46	-1.45	-0.13	0.01
	(-0.89)	(-0.97)	(-0.70)	(0.19)
Age_{t+1}	0.87	0.93	-0.08	-0.05
	(1.04)	(1.22)	(-0.90)	(-1.19)
ROA_{t+1}	0.03	-0.19	0.06	0.01
	(0.02)	(-0.18)	(0.49)	(0.19)
Lev_{t+1}	-3.24	-3.34†	0.10	-0.17†
	(-1.48)	(-1.67)	(0.40)	(-1.67)
$Size_{t+1}$	2.80**	2.69***	0.08	0.04
	(3.06)	(3.22)	(0.80)	(0.98)
$Return_{t+1}$	0.83***	0.71***	0.04**	0.01
	(5.04)	(4.70)	(2.14)	(1.42)
Industry	Controlled	Controlled	Controlled	Controlled
No. of Obs.	1430	1430	1430	1430
Wald χ^2	1282.10***	313.48***	106.53***	41.30***

Notes:

1. †, *,**, and *** indicate significance levels at 10%, 5% ,1% and 0.1%, respectively, for *t* and for *z* tests.
2. Board gender diversity measured as the percentage of female directors sitting on board is used as the instrumental variable in 2SLS analyses.
3. Please refer to Appendix 1 for the definition of variables.

Table 9: Disaggregated Voluntary CSP and Institutional Investment

	IO_{t+1}	MF_{t+1}	LTI_{t+1}	$QFII_{t+1}$
Constant	-10.48***	-9.86***	-4.91***	-0.68
	(-7.71)	(-7.85)	(-3.25)	(-0.99)
C1 (Environment)	-0.05	-0.02	-0.02	0.00
	(-0.34)	(-0.18)	(-1.04)	(-0.59)
C2 (Energy-saving)	-0.27†	-0.27†	-0.01	0.01†
	(-1.73)	(-1.90)	(-0.76)	(1.78)
C3 (Employees)	0.25	0.23	0.00	-0.01
	(1.47)	(1.46)	(0.23)	(-0.89)
C4 (Equality)	0.37†	0.39†	0.01	0.01
	(1.65)	(1.85)	(0.49)	(0.70)
C5 (Social)	0.33	0.34	0.05	0.01
	(0.97)	(1.10)	(1.24)	(0.84)
C6 (Customers)	0.69***	0.56***	0.06***	0.01
	(4.28)	(3.76)	(3.36)	(1.05)
C7 (Stakeholders)	-0.01	-0.02	-0.00	0.00
	(-0.17)	(-0.34)	(-0.32)	(1.52)
C8 (Law-abiding and Ethics)	0.34	0.24	-0.01	-0.01
	(1.32)	(1.00)	(-0.38)	(-0.61)
MO_{t+1}	0.03	0.04	0.00	0.00
	(0.81)	(1.20)	(-0.31)	(0.41)
SOE_{t+1}	0.15	0.24	-0.21**	0.00
	(0.16)	(1.02)	(-2.00)	(0.01)
OLP_{t+1}	0.89***	-0.11***	-0.01**	0.00
	(30.99)	(-4.12)	(-2.50)	(0.33)
$Duality_{t+1}$	0.71	0.78	-0.09	0.10
	(0.60)	(0.71)	(-0.69)	(1.61)
$BSize_{t+1}$	0.59	0.27	-0.13	-0.00
	(0.50)	(0.25)	(-0.99)	(-0.08)
$MSize_{t+1}$	0.61	0.70	-0.09	-0.02
	(0.55)	(0.69)	(-0.70)	(-0.33)
$BIndep_{t+1}$	-0.14*	-0.12†	0.00	0.00
	(-2.14)	(-1.93)	(0.10)	(-0.36)
$DSalary_{t+1}$	0.19	0.24	0.02	-0.01
	(1.03)	(1.40)	(1.18)	(-1.12)
$MSalary_{t+1}$	0.64†	0.65†	-0.01	0.02
	(1.72)	(1.87)	(-0.21)	(1.13)
$Bonus_{t+1}$	-0.65	-0.72	-0.02	0.02
	(-0.44)	(-0.53)	(-0.13)	(0.25)
Age_{t+1}	0.80	0.88	-0.09	-0.05
	(1.02)	(1.21)	(-1.03)	(-1.17)
ROA_{t+1}	-0.42	-0.59	0.02	0.01
	(-0.38)	(-0.58)	(0.18)	(0.22)
Lev_{t+1}	-2.36	-0.30	-0.18	-0.17†
	(-1.18)	(-1.02)	(-0.81)	(-1.68)
$Size_{t+1}$	4.53***	4.14***	0.26***	0.04*
	(11.80)	(11.68)	(5.99)	(2.17)
$Return_{t+1}$	0.88***	0.75***	0.04**	0.01
	(5.85)	(5.35)	(2.62)	(1.44)
Industry	Controlled	Controlled	Controlled	Controlled
No. of Obs.	1430	1430	1430	1430
Adjusted R^2	50.96%	19.28%	6.22%	0.79%

Notes:

1. *t* test scores are reported in parentheses. †, *,**, and *** indicate significance levels at 10%, 5% ,1% and 0.1%, respectively.
2. Please refer to Appendix 1 for the definition of variables.

Table 10: Disaggregated Voluntary CSP and Likelihood of Increases in Institutional Investment

	Prob(+$\Delta IO_{t,t+1}$)	Prob(+$\Delta MF_{t,t+1}$)	Prob(+$\Delta LTI_{t,t+1}$)	Prob(+$\Delta QFII_{t,t+1}$)
Constant	0.09	-5.07	-5.19	-4.67
	(0.11)	(-0.06)	(-0.04)	(-0.03)
C1 (Environment)	0.02	0.03*	0.00	0.00
	(1.35)	(2.16)	(0.33)	(-0.10)
C2 (Energy-saving)	0.00	-0.03*	0.00	0.04†
	(-0.17)	(-2.25)	(0.05)	(1.93)
C3 (Employees)	-0.01	0.02	-0.01	-0.03
	(-0.78)	(1.51)	(-0.52)	(-1.05)
C4 (Equality)	0.00	0.01	0.02	0.01
	(-0.01)	(0.31)	(0.84)	(0.31)
C5 (Social)	-0.03	0.05	0.04	0.11**
	(-1.26)	(1.55)	(1.35)	(2.80)
C6 (Customers)	0.01	0.06***	0.08***	0.02
	(0.40)	(4.19)	(4.93)	(0.97)
C7 (Stakeholders)	0.00	0.00	0.01	0.01
	(0.47)	(0.76)	(1.55)	(1.09)
C8 (Law-abiding and Ethics)	-0.02	0.01	0.04	-0.03
	(-0.97)	(0.43)	(1.32)	(-0.82)
$\Delta ROA_{t,t+1}$	0.00	-0.05	0.03	0.17
	(0.06)	(-0.57)	(0.34)	(1.10)
$\Delta Lev_{t,t+1}$	0.01	0.06	0.09	0.12
	(0.06)	(0.40)	(0.59)	(0.53)
$\Delta Size_{t,t+1}$	0.43***	0.40***	0.09	0.07
	(3.41)	(4.66)	(1.31)	(1.10)
$Return_{t,t+1}$	1.07***	1.03***	0.07	0.35
	(6.47)	(6.23)	(0.30)	(1.40)
Industry	Controlled	Controlled	Controlled	Controlled
No. of Obs.	1430	1430	1430	1430
LR Chi^2	79.96	82.19	66.17	34.48

Notes:

1. *t* test scores are reported in parentheses. †, *,**, and *** indicate significance levels at 10%, 5% ,1% and 0.1%, respectively.
2. Please refer to Appendix 1 for the definition of variables.

Appendix 1: Definitions and Calculations of Variables

Variables	Definitions	Calculations
Panel A: Institutional Investment Variables		
IO_t, IO_{t+1}	Institutional investment levels in years *t* and *t+1*, respectively	The shareholding percentage of institutional investors in each sample firm
$+IO_{t+1}$	Dummy variable	Equal to 1 if $IO_{t+1} > IO_t$ and 0 otherwise
MF_t, MF_{t+1}	Investment levels by mutual funds in years *t* and *t+1*, respectively	The shareholding percentage of mutual funds in each sample firm
LTI_t, LTI_{t+1}	Investment levels by long-term institutional investors (LTI) in years *t* and *t+1*, respectively	The shareholding percentage of insurance companies and social security funds in each sample firm
$QFII_t$, $QFII_{t+1}$	Investment levels by QFIIs in years *t* and *t+1*, respectively	The shareholding percentage of mutual funds in each sample firm
Panel B: Voluntary CSP Variables		
CSP_t	Voluntary corporate social performance score	Aggregate SNAI CSR index (2007)
C1	Environment score	SNAI CSR index (2007) with respect to environment
C2	Energy-saving score	SNAI CSR index (2007) with respect to energy-saving
C3	Employees score	SNAI CSR index (2007) with respect to employee
C4	Equality score	SNAI CSR index (2007) with respect to equality
C5	Social score	SNAI CSR index (2007) with respect to environment score
C6	Customers score	SNAI CSR index (2007) with respect to customers
C7	Stakeholders score	SNAI CSR index (2007) with respect to stakeholders
C8	Law-abiding and Ethics	SNAI CSR index (2007) with respect to law-abiding and ethics
Panel C: Ownership Structure and Corporate Governance Variables		
MO_t	Managerial shareholding	The shareholding percentage of managers
SOE_t	Dummy variable	Equals to 1 for SOEs and 0 for non-SOEs
OLP_t	Ordinary legal persons' ownership	The shareholding percentage of ordinary legal persons

$Duality_t$	Dummy variable	Equals to 1 if CEO and board chair are the same person and 0 otherwise
$BSize_t$	Board size	Natural logarithm of the total number of directors on board
$MSize_t$	Managerial size	Natural logarithm of the total number of senior managers
$BIndep_t$	Board independence	The percentage of independent directors on board
Panel D: Compensation and Other Firm Characteristics Variables		
$DSalary_t$	Directors' salaries	Natural logarithm of the total salary of directors
$Msalary_t$	Managers' salaries	Natural logarithm of the total salary of managers
$Bonus_t$	Bonus payments	Natural logarithm of the total bonus payments of managers
Age_t	Firm age	Natural logarithm of the total number of years since the establishment of firms
ROA_t, ROA_{t+1}	Return on asset ratio	Operating profits scaled by total assets in years *t* and *t+1*, respectively
Lev_t, Lev_{t+1}	Total debt ratio	Total debts scaled by total assets
$Size_t$, $Size_{t+1}$	Firm size	Natural logarithm of the total assets in years *t* and *t+1*, respectively
$Return_t$, $Return_{t+1}$	Adjusted Daily Share Return	Adjusted Share Return on 31 December of years *t* and *t+1*, respectively
$Return_{t,t+1}$	Adjusted Annual Share Return	Adjusted Share Return from 31 December of year *t* to 31 December of year *t+1*

Note: $BSize_t$, $MSize_t$, $DSala_t$, $MSala_t$, $Bonus_t$, Age_t, $Size_t$ and $Size_{t+1}$ reported in Table 1 are original numbers before taking natural logarithms.

Appendix 2: SNAI CSR index Criteria

Criteria	Sub-criteria
C1- Environment	• curbing polluted environment; • recycling waste harmful to environment; • producing products good to environment protection; • using other means to control pollution
C2- Energy-saving	• making use of old and waste materials; • making effort to reduce energy consuming; • continuously improving energy saving of products; • supporting research on energy saving
C3- Employees	• caring healthy and safety of employee; • training employee; reemployment of laid-off employees; • reasonably arrangement of working time and positions; • establishment and enforcement of standards on overtime; • no employment of child labour; • providing employee benefit
C4- Equality	• employment and promotion of minorities; • employment and promotion of female; • employment and promotion of the handicapped; • employment and promotion of veterans
C5- Social	• donation to community; • donation to education institutes; • donation to medical activities; • donation to arts and sports; • donation to disaster areas; • attention to public safety; • opening company facilities to the public
C6- Customers	• delivery on time; • improvement of products quality; • attaching importance to safe use of products; • bettering after service; • attention to interests of specific customers
C7- Stakeholders	• respect to interests of creditors; • consideration on interests of suppliers
C8- Law-abiding / Ethics	• anti-corruption, extortion, bribery; • operating faithfully and lawfully

[i] The fact that the voluntary CSP rating is only available for 2008 unfortunately prohibits us from analysing the effects of changes in the rating on institutional investment. Fortunately, this reduces the endogeneity concern in our study. In a scenario in which the voluntary CSP rating was available to the public in two continuous years (*t* and *t+1*), testing the impact of CSP_t on changes in institutional investment would be complicated by the fact that institutional investors, as informed and sophisticated investors, would be able to predict voluntary CSP_{t+1}.

[ii] Institutional investment here includes investment from ordinary legal persons (normally state-owned enterprises) and non-financial corporations. In the present paper, ordinary legal persons and non-financial corporations are excluded from our definition of institutional investors.

[iii] Extant literature offers mixed evidence of institutional investors' effect on firms' CSR/CSP. Dam and Scholtens (2012) suggest that shareholdings by banks and institutional investors have no significant effect on European firms' CSR. Lopatta et al. (2017) find that bank ownership is positively related to CSR performance.

[iv] The melamine contamination incident broke out on September 11, 2008, when Sanlu Co., one of China's largest dairy manufacturers, announced that its products that were on sale, including infant formula, had been contaminated by melamine. Sanlu immediately recalled all its products from the market. Since melamine had been added to raw milk, consumers suspected that other brands' dairy products could potentially have been contaminated as well. The fear was confirmed two days later when products of 22 brands (with total market shares exceeding 90% in liquid milk and 50% in powdered milk) were found to contain melamine.

[v] We extend the work of Wang et al. (2011) by several means. First, we conduct analyses on a larger sample of listed firms (over 1,400 in comparison to 114). This ensures the generality of our empirical evidence. Second, the event study methodology in Wang et al. (2011) captures the response of mutual funds to the melamine contamination incident but does not necessary lead to the implication that mutual funds trade according to the more general and regular CSR disclosure in China. Third, we consider other types of institutional investors in China, in addition to the mutual funds investigated in Wang et al. (2011), as will be discussed later in this section.

[vi] Bushee (2001) and Yan and Zhang (2009) classify institutional investors according to their portfolio turnovers. Unfortunately, portfolio turnover data are not available for our sample firms.

[vii] Securities companies function as investment banks and asset management companies in China.

[viii] The voice approach commonly means voting against the management, where institutional investors monitor firm management. The exit approach is also called 'voting with one's feet' and refers to institutional investors choosing to liquidate their shareholdings in a firm.

[ix] In January 2014, the CIRC started consulting with the public regarding its intention to lift the 25% cap to 30%, implying that the government was making an effort to encourage equity investment by long-term institutional investors such as insurance companies.

[x] On August 1, 2000, the Central Committee of the Communist Party of China and the State Council decided to establish the national social security fund as a solution to its aging population problem.

[xi] Ordinary legal persons are usually SOE owners.

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